LAKE HAVASU CITY, ARIZONA KING'S VIEW SEAWALL REPAIR

CITY PROJECT NO. CI1000

UTILITY CONTACTS

(ELECTRIC)

LAKE HAVASU CITY (928) 855-3999 (WASTEWATER) (928) 855-2618 LAKE HAVASU CITY (WATER) (928) 855-9855 SUDDEN LINK (928) 453-0541 FRONTIER COMMUNICATION (928) 505-7025 UNISOURCE ENERGY SERVICES UNISOURCE ENERGY SERVICES (928) 505 - 7031



Kimley » Horn

CITY COUNCIL

MAYOR VICE MAYOR DON CALLAHAN COUNCIL MEMBER DEAN BARLOW DONNA BRISTER-McCOY COUNCIL MEMBER MICHELE LIN COUNCIL MEMBER CAL SHEEHY COUNCIL MEMBER JENI COKE COUNCIL MEMBER

PROJECT MANAGER

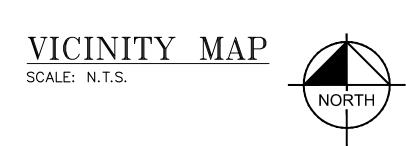
RYAN MOLHOEK, P.E.

PROJECT ENGINEER

KIMLEY-HORN 7740 N. 16th STREET, SUITE 300 PHOENIX, AZ 85020 PHONE: 602-371-4566

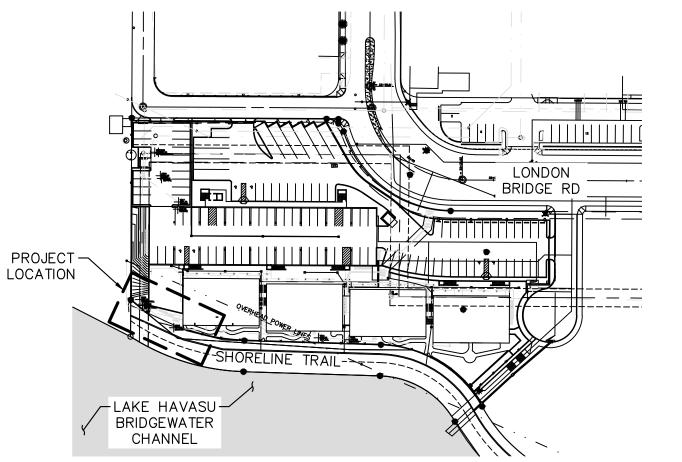
CONTACT: BRETT STROUP, P.E.

- LAKE -HAVASU PROJECT -LOCATION



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Kimley **Horn 7740 N. 16TH STREE SUITE 300, PHOENIX, AZ 85020 PHONE: 602-944-550

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Sheet Number:

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KINGS VIEW GENERAL NOTES

A. GENERAL

- 1. ALL STRUCTURES ARE DESIGNED TO ACT AS A STRUCTURAL UNIT UPON COMPLETION. CONTRACTOR SHALL DESIGN AND PROVIDE NECESSARY BRACING. TEMPORARY SUPPORTS. AND SHORING TO RESIST FORCES ON THE STRUCTURE DURING CONSTRUCTION.
- 2. VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO STARTING WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- 3. VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO STARTING WORK.
- 4. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE RETAINING WALL AND SHEET PILES TO THE ENGINEER FOR REVIEW AND APPROVAL.
- 5. CONTRACTOR SHALL EXERCISE EXTREME CARE DURING THE EXCAVATION AND CONSTRUCTION FOR NEW STRUCTURE TO AVOID DAMAGE TO EXISTING STRUCTURES AND EXISTING UTILITIES. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL MEANS AND METHODS REQUIRED TO FACILITATE CONSTRUCTION OF THE WORK AND ENSURING THE SAFETY, STABILITY AND INTEGRITY OF ADJACENT STRUCTURES AND FACILITIES.
- 6. THE ENGINEER SHALL BE NOTIFIED A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
- 7. ANY WORK PERFORMED WITHOUT THE KNOWLEDGE AND APPROVAL BY THE ENGINEER AND OR ALL WORK MATERIAL NOT IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- 8. NO JOB WILL BE CONSIDERED COMPLETE UNTIL ALL CURBS, PAVEMENT AND SIDEWALKS (NEW AND EXISTING) HAVE BEEN SWEPT CLEAN OF ALL DIRT AND DEBRIS.
- 9. ALL QUANTITIES SHOWN ON PLANS ARE APPROXIMATE, ARE NOT VERIFIED BY THE ENGINEER, AND ARE FURNISHED SOLELY FOR THE CONTRACTOR'S CONVENIENCE. THEY DO NOT NECESSARILY CORRESPOND TO BID SCHEDULE ITEMS. PAYMENT WILL BE BASED ON BID SCHEDULE ITEMS. THE CONTRACTOR SHALL NOT BE RELIEVED OF HIS RESPONSIBILITY FOR INDEPENDENTLY ESTIMATING WORK QUANTITIES PRIOR TO BIDDING.
- 10. BACKFILL COMPACTION SHALL BE PER MAG 301, UNLESS OTHERWISE NOTED.
- 11. REMOVAL OF STRUCTURES AND OBSTRUCTIONS AS NECESSARY TO COMPLETE THE WORK, OTHER THAN SPECIALLY SCHEDULED IN THE BID, IS INCIDENTAL TO THE CONTRACT. NO SEPARATE MEASUREMENT OF PAYMENT FOR UNSCHEDULED REMOVAL ITEMS WILL BE MADE.
- 12. CONSTRUCTION STAKING SHALL BE BY THE CONTRACTOR'S SURVEYOR WITH CONTROL PROVIDED BY THE DESIGN ENGINEER WHO STAMPED THE PLANS.
- 13. THE LAKE HAVASU CITY MAY ORDER ANY OR ALL WORKMANSHIP AND MATERIALS TO BE TESTED ACCORDING TO APPLICABLE STANDARDS.
- 14. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL REWORK AND/OR REMOVAL AND REPLACEMENT OF ALL MATERIALS AND/OR WORKMANSHIP REPRESENTED BY A FAILING TEST.
- 15. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS OF TESTING AND QUALITY ASSURANCE/QUALITY CONTROL AS DELINEATED IN THE CITY'S PROJECT SPECIFICATIONS. THE COST OF TESTING IS INCIDENTAL TO EACH ITEM OF WORK. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COST OF ANY CITY INSPECTION AND CITY INSPECTION TIME IF THE CONTRACTOR'S WORK IS BEING PERFORMED IN OVERTIME, AT NIGHT, OR ON WEEKENDS.
- 16. APPROVAL OF A PORTION OF THE WORK IN PROGRESS DOES NOT GUARANTEE ITS FINAL ACCEPTANCE. TESTING AND EVALUATION MAY CONTINUE UNTIL WRITTEN FINAL ACCEPTANCE OF A COMPLETE AND WORKABLE UNIT.
- 17. THE LAKE HAVASU CITY MAY SUSPEND THE WORK BY WRITTEN NOTICE WHEN, IN ITS JUDGEMENT, PROGRESS IS UNSATISFACTORY, WORK BEING DONE IS UNAUTHORIZED OR DEFECTIVE, WEATHER CONDITIONS ARE UNSUITABLE. OR THERE IS A DANGER TO THE PUBLIC HEALTH OR SAFETY.
- 18. CLEARING AND GRUBBING IS CONSIDERED INCIDENTAL TO THE WORK UNLESS SEPARATELY IDENTIFIED IN THE BID SCHEDULE. NO SEPARATE MEASUREMENT OF OR PAYMENT FOR CLEARING, GRUBBING, AND TREE REMOVAL WILL BE MADE. THE SITE OF ALL EXCAVATION, EMBANKMENTS, AND FILLS SHALL FIRST BE CLEARED OF STUMPS, TRASH, WEEDS, RUBBISH, AND LOOSE BOULDERS WHICH SHALL BE REMOVED AND DISPOSED OF. THE CONTRACTOR MUST SATISFY HIMSELF REGARDING THE CHARACTER AND AMOUNT OF LOAM, CLAY, SAND, QUICKSAND, HARDPAN, GRAVEL, ROCK, WATER, AND ALL OTHER MATERIAL TO BE ENCOUNTERED AND WORK TO BE PERFORMED.
- 19. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON FIELD DATA AND MAP RECORDS. THE CONTRACTOR SHALL CONTACT 1-800-STAKE-IT PRIOR TO ANY CONSTRUCTION ACTIVITY TO VERIFY THE ACTUAL LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL DETERMINE WHICH UTILITIES DO NOT PARTICIPATE IN 1-800-STAKE-IT AND CONTACT THEM DIRECTLY TO VERIFY THE LOCATION OF THOSE UTILITIES. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATION SHALL BE REPORTED TO THE UTILITY OWNER IMMEDIATELY AND REPAIRED OR REPLACED AT NO COST TO THE CITY. IN CASES WHEN THE EXISTING UTILITIES ARE NOT AS DEPICTED ON THE PLANS SOME MINOR DEVIATION TO THE PROPOSED ALIGNMENT MAY BE ALLOWED TO MAINTAIN MINIMUM SEPARATION DISTANCES BETWEEN UTILITIES. ANY PROPOSED TO MAINTAIN MINIMUM SEPARATION DISTANCES BETWEEN UTILITIES. ANY PROPOSED TO CHANGES TO THE ALIGNMENT MUST BE SUBMITTED TO THE CITY'S REPRESENTATIVE FOR REVIEW. NO CHANGES WILL BE ALLOWED WITHOUT PRIOR APPROVAL.
- 20. THE CONTRACTOR SHALL LIMIT THE WORK AREA TO PUBLIC RIGHT-OF-WAY AND PERMANENT EASEMENTS AS SHOWN FOR CONSTRUCTION OF THE PROJECT. TEMPORARY CONSTRUCTION EASEMENTS EXIST AS SHOWN AND INDICATED IN THE PLANS.
- 21. CONTRACTOR SHALL OBTAIN ANY ADDITIONAL TEMPORARY EASEMENTS OR USE AGREEMENTS THAT ARE DEEMED NECESSARY FOR CONSTRUCTION AT NO ADDITIONAL COST TO THE CITY. COPIES OF ALL CONTRACTOR OBTAINED EASEMENTS AND USE AGREEMENTS SHALL BE PROVIDED TO THE CITY'S REPRESENTATIVE PRIOR TO THE UTILIZATION OF THE SITE.
- 22. THE CONTRACTOR SHALL GRADE AND RESURFACE ALL AREAS DISTURBED BY CONSTRUCTION, INCLUDING LANDSCAPE ROCK, IN ACCORDANCE WITH THE SPECIFICATIONS AND TO A CONDITION EQUAL TO, OR BETTER THAN, THE PRE-CONSTRUCTION CONDITION.
- 23. THE CONTRACTOR SHALL PROTECT ALL CONCRETE STRUCTURES TO REMAIN. ALL CONCRETE REPLACEMENT SHALL BE FROM JOINT TO JOINT (WALLS, SIDEWALK) AND SHALL BE REPLACED WITH 4000 PSI CONCRETE. ALL DAMAGED CONCRETE PANELS AND DAMAGED STEEL SHEET PILES MUST BE REPLACED AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 24. THE CONTRACTOR SHALL PROVIDE PROTECTION TO PREVENT UNDERMINING OR DAMAGING THE STRUCTURAL INTEGRITY OF ALL FENCES, RETAINING WALLS, STREET SIGNS, OTHER UTILITY POLES, OR OTHER PRIVATE OR PUBLIC IMPROVEMENTS WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNING UTILITY AS NECESSARY TO PROVIDE TEMPORARY SUPPORT, OR PROTECTION DURING CONSTRUCTION WORK, AND SHALL NEATLY REMOVE AND PROMPTLY REPLACE NON UTILITY IMPROVEMENTS WITHOUT UNDUE DISRUPTION. THE COST OF ALL SUCH PROTECTION, REMOVAL, AND REPLACEMENT REQUIRED TO COMPLETE THE PROJECT SHALL BE SUBSIDIARY TO OTHER BID ITEMS.
- 25. THE CONTRACTOR SHALL REMOVE ALL FENCING, ASPHALT AND CONCRETE ROADS AND DRIVEWAYS, CURB AND GUTTER, RIP-RAP, DRAINAGE CULVERTS AND ASSOCIATED APPURTENANCES AS REQUIRED FOR CONSTRUCTION PURPOSES. ALL ITEMS DAMAGED OR REMOVED SHALL BE RESTORED IN ACCORDANCE WITH THE SPECIFICATION TO A CONDITION EQUAL TO, OR BETTER THAN, THEIR CONDITION PRIOR TO THE START OF THE PROJECT. ITEMS OF WORK NOT SPECIFICALLY INCLUDED IN THE MEASUREMENTS AND PAYMENT SECTION OF THE SPECIFICATIONS SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS AND SHALL NOT BE PAID FOR SEPARATELY.

- 26. IT IS NOT THE INTENTION OF THE SPECIFICATIONS TO SUPERSEDE ANY FEDERAL, STATE OR LOCAL LAWS, REGULATIONS AND OR ORDINANCES: THEY SHALL GOVERN IN ALL INSTANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SHOW A GOOD FAITH EFFORT AND TO PROTECT ALL EXISTING UTILITY TIES AND STRUCTURES AND TO ABIDE BY ALL FEDERAL, SATE AND LOCAL LAWS AND ORDINANCES IN THIS RESPECT.
- 27. THE CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS ON PRIVATE PROPERTY. ALL ITEMS DAMAGED OR REMOVED SHALL BE RESTORED IN ACCORDANCE WITH THE SPECIFICATION TO A CONDITION EQUAL TO, OR BETTER THAN, THEIR CONDITION PRIOR TO THE START OF THE PROJECT.
- 28. PROPERTY LINES SHOWN ON DRAWINGS ARE APPROXIMATE
- 29. ORDINARY HIGH WATER MARK (OHWM) = 450.00'. (FILE NO. SPL-2009-00492-MB)

B. DESIGN CRITERIA

- 1. SPECIFICATIONS
- B. CONSTRUCTION LAKE HAVASU CITY PROJECT SPECIFICATIONS AND SPECIAL PROVISIONS, AND UNIFORM SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, MARICOPA COUNTY (MAG), LATEST EDITION.
- 2. DESIGN LOADS
 - DEAD LOAD WEIGHT OF BACKFILL = 120 pcf EQUIVALENT FLUID PRESSURE FOR ACTIVE SOIL PRESSURE = 40 psf/ft EQUIVALENT FLUID PRESSURE FOR PASSIVE SOIL PRESSURE = 200 psf/ft COEFFICIENT OF FRICTION = 0.25

C. FOUNDATION

- 1. FOUNDATION DATA BASED ON GEOTECHNICAL ENGINEERING REPORT SHORELINE RESTORATION ON BRIDGEWATER CHANNEL AT KING'S VIEW CONDOMINIUMS PREPARED BY RAMM, INC., PROJECT NO. G22900, DATED FEBRUARY 24, 2016, AND SUPPLEMENT NO. 1, DATED MAY 13, 2016.
- 2. ALLOWABLE BEARING PRESSURE: (BOTTOM OF FOOTING BELOW GRADE)

LIVE LOAD SURCHARGE = 100 psf (2012 IBC TABLE 1607.1)

1000 PSF (MIN. 4'-6" BELOW ORIGINAL TOP OF SEA WALL) SOIL SITE CLASS DESIGNATION D

- 1. ALL CONCRETE FOR STRUCTURES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 POUNDS PER SQUARE INCH AT 28 DAYS EXCEPT AS NOTED (MAG SECTION 725, CLASS AA).
- 2. REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM DESIGNATION A615, GRADE 60, DEFORMED. REINFORCING BARS SHOWN ON THE PLANS TO BE WELDED SHALL BE NEW BILLET STEEL CONFORMING TO ASTM DESIGNATION A706, GRADE 60, DEFORMED.
- 3. CONCRETE DESIGN IS IN CONFORMANCE WITH "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-11). AND 2012 IBC.
- 4. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS, ETC. IN ACCORDANCE WITH "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT (ACI SP-66(04)).
- CONCRETE COVER FOR REINFORCEMENT BARS SHALL CONFORM TO THE FOLLOWING, UNLESS INDICATED OTHERWISE ON THE DRAWINGS. A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . 3 INCHES
- 6. CHAMFER EXPOSED CONCRETE EDGES 3/4 INCH X 3/4 INCH UNLESS NOTED OTHERWISE.

NOTE: CLEARANCES MAY BE REDUCED 1/2 INCH FOR STIRRUPS AND TIES.

E. STEEL SHEET PILES

1. STEEL SHEET PILES SHALL HAVE A MINIMUM SECTION MODULUS OF 8 IN3 @ 50 KSI (SKYLINE STEEL PZ 22 OR APPROVED EQUAL). CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH LAKE HAVASU CITY SPECIFICATIONS SECTION 02254. STEEL SHEET PILING SHALL CONFORM TO ASTM A328. STEEL SHEET PILING AND INTERLOCKS SHALL NOT HAVE EXCESSIVE KINKS, CAMBER, OR TWISTS THAT WOULD PREVENT THE PILE

F. FINISHES NOTES

1. RETAINING WALL SHALL BE PAINTED. COLOR SHALL MATCH EXISTING RETAINING WALL. CONTRACTOR SHALL SUBMIT PAINT COLOR SAMPLE FOR REVIEW AND APPROVAL.

SPECIAL INSPECTION

- 1. SPECIAL INSPECTION SHALL BE REQUIRED AT OWNERS DISCRETION. SPECIAL INSPECTION INCLUDES MATERIALS, INSTALLATION, FABRICATION, ERECTION OR PLACEMENT OF COMPONENTS AND CONNECTIONS REQUIRING SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS, AND IN ACCORDANCE WITH 2012 IBC INTERNATIONAL CODE.
- 2. COORDINATE SCHEDULES WITH AGENCY PERFORMING SPECIAL INSPECTION TO INSURE AMPLE TIME IS AVAILABLE TO PERFORMED REQUIRED TASKS.

BASIS OF HORIZONTAL CONTROL

HORIZONTAL DATUM - NAD83 (CORS96) PROJECTION - SPC AZ WEST LINEAR UNITS - US FOOT GEOID - GEOID 2003 ZONE 5

HORIZONTAL CONTROL IS ADJUSTED TO GROUND COORDINATES. CONTROL PT NO. 1 HELD FOR GROUND ORIGIN POINT - COMBINED SCALE FACTOR = 1.000047195569 (GRID TO GROUND)

PROJECT BASE CONTROL POINTS CONTROL POINT NO. 1

DESCRIPTION - 1/8 REBAR WITH CAP APLS CONTROL. COORDINATES

N: 1264346.4460

E: 519249.8370 ELEV. 476.04

ELEV. 479.13

CONTROL POINT NO. 2 DESCRIPTION - 1/2 REBAR WITH CAP APLS CONTROL

COORDINATES N: 1264120.1970

E: 518654.5917

BASIS OF BEARINGS BETWEEN CONTROL POINT 1 AND CONTROL POINT 2.

S.69°11'23"W.636.83'

LEGEND

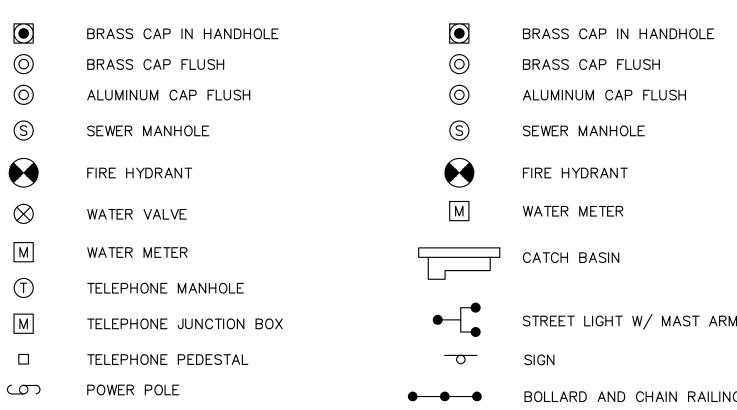
EXISTING

SIGN

POST

BOLLARD AND CHAIN RAILING

____ FENCE



PROPERTY LINE, EX R/W _____ EX EASEMENT EX UTILITY LINE WITH SIZE & TYPE — 36"SS ——— EX CONTOUR PROPOSED CONTOUR

AMERICAN INSTITUTE OF STEEL CONSTRUCTION

EDGE OF RIP-RAP

ABBREVIATIONS

AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
APPROX	APPROXIMATELY
ASLD	ARIZONA STATE LAND DEPARTMENT
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
BF	BACK FACE
BLDG	BUILDING
	CENTERLINE
Ę.	
CLR	CLEAR
CONC	CONCRETE
CT	CONSTRUCTION
DIA	DIAMETER
DWG	DRAWING
E	EAST, EASTING
ELEV	ELEVATION
	ELECTRIC
ELC	
ESMT	EASEMENT
EXST	EXISTING
FF	FRONT FACE
FG	FINISH GRADE ELEVATION
FT	FOOT OR FEET
GND	GROUND
HW	HIGH WATER
JT	JOINT
LF	LINEAR FEET
LOL	LAYOUT LINE
	LUMP SUM
LS	
MAG	MARICOPA ASSOCATION OF GOVERNMENTS
MH	MANHOLE
N	NORTH, NORTHING
NIC	NOT-IN-CONTRACT
NPI	NON-PAY ITEM
NTS	NOT TO SCALE
OC	ON CENTER
PIP	PROTECT IN PLACE
	PROPERTY LINE
P DDOD	PROPOSED
PROP	
RW1	RETAINING WALL 1
S/W	SIDEWALK
SF	SQUARE FOOT
SPA	SPACING
SHT	SHEET
SPEC	SPECIFICATIONS
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
	TOP OF FOOTING
T/F	TOD OF WALL

TOP OF WALL

T/W



NEW

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VASU CIT AVA HAV TIONS K A W A X

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ARIZONA BLUE STAKE CALL TWO WORKING DAYS BEFORE YOU DIG Dial 811 or 602-263-1100 1-800-STAKE-IT (OUTSIDE MARICOPA COUNTY

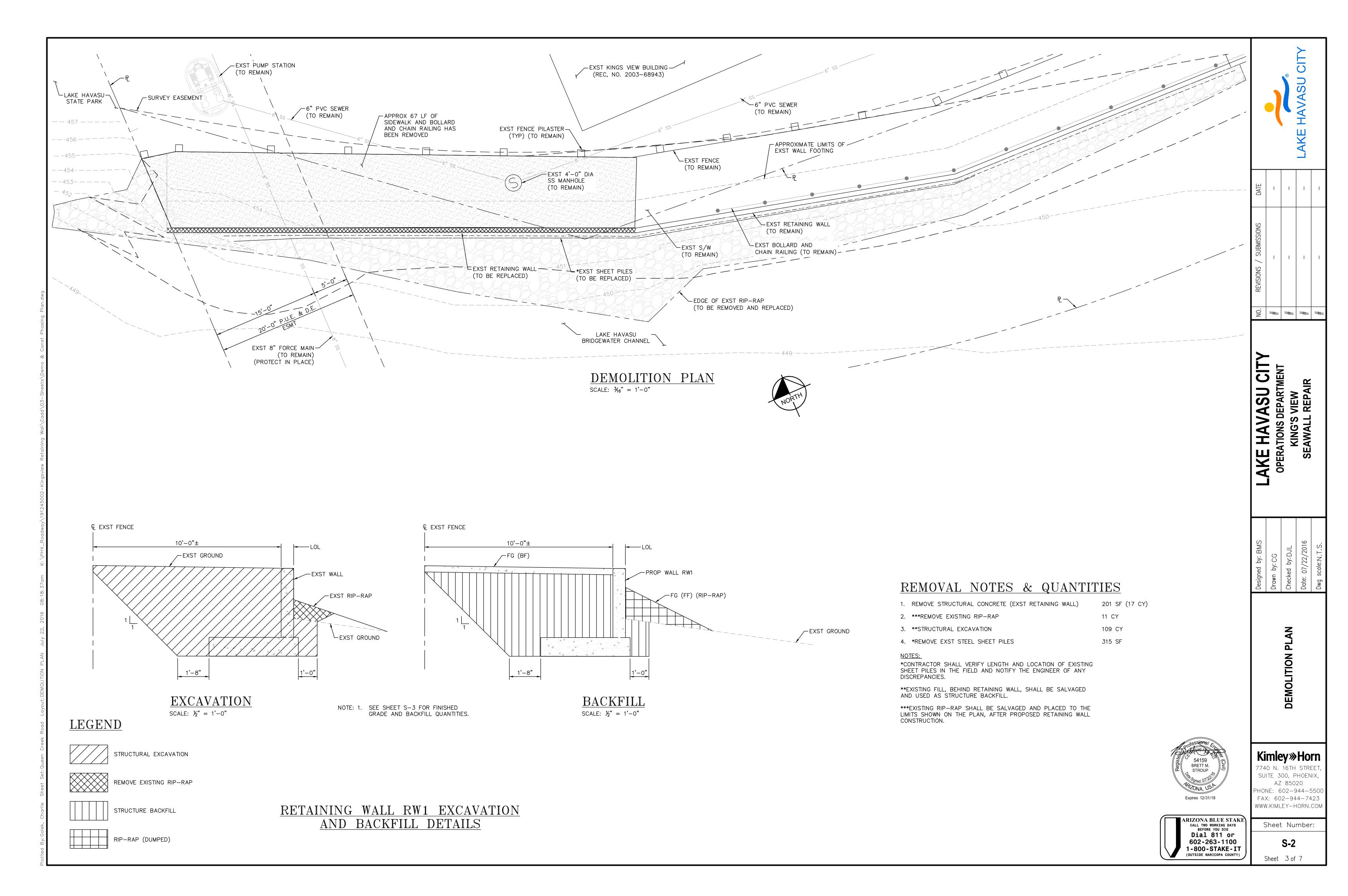
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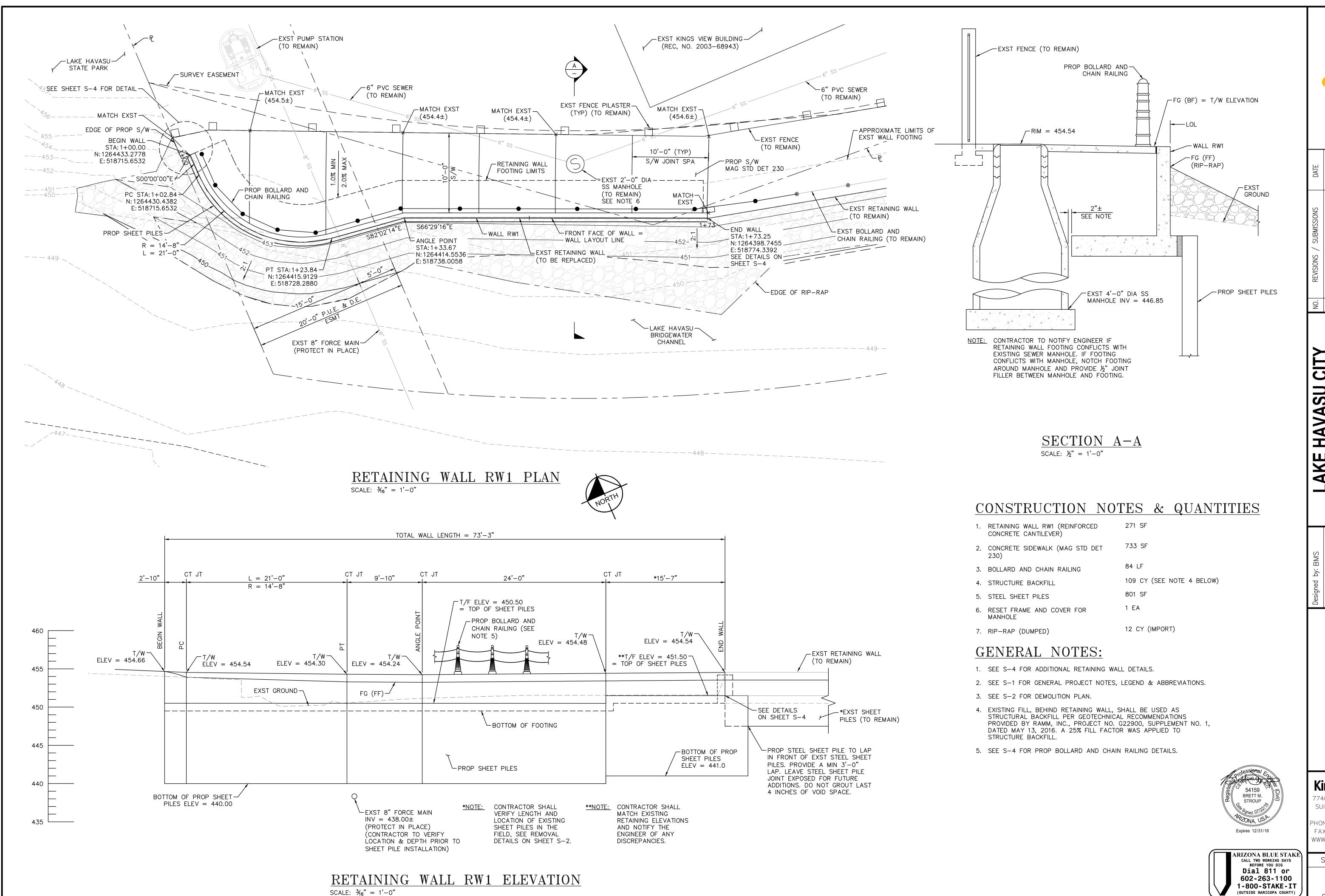
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Sheet Number:

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AKE HAVASU CITY
OPERATIONS DEPARTMENT
KING'S VIEW
SEAWALL REPAIR

SITE PLAN AND RETAINING WALL ELEVATION

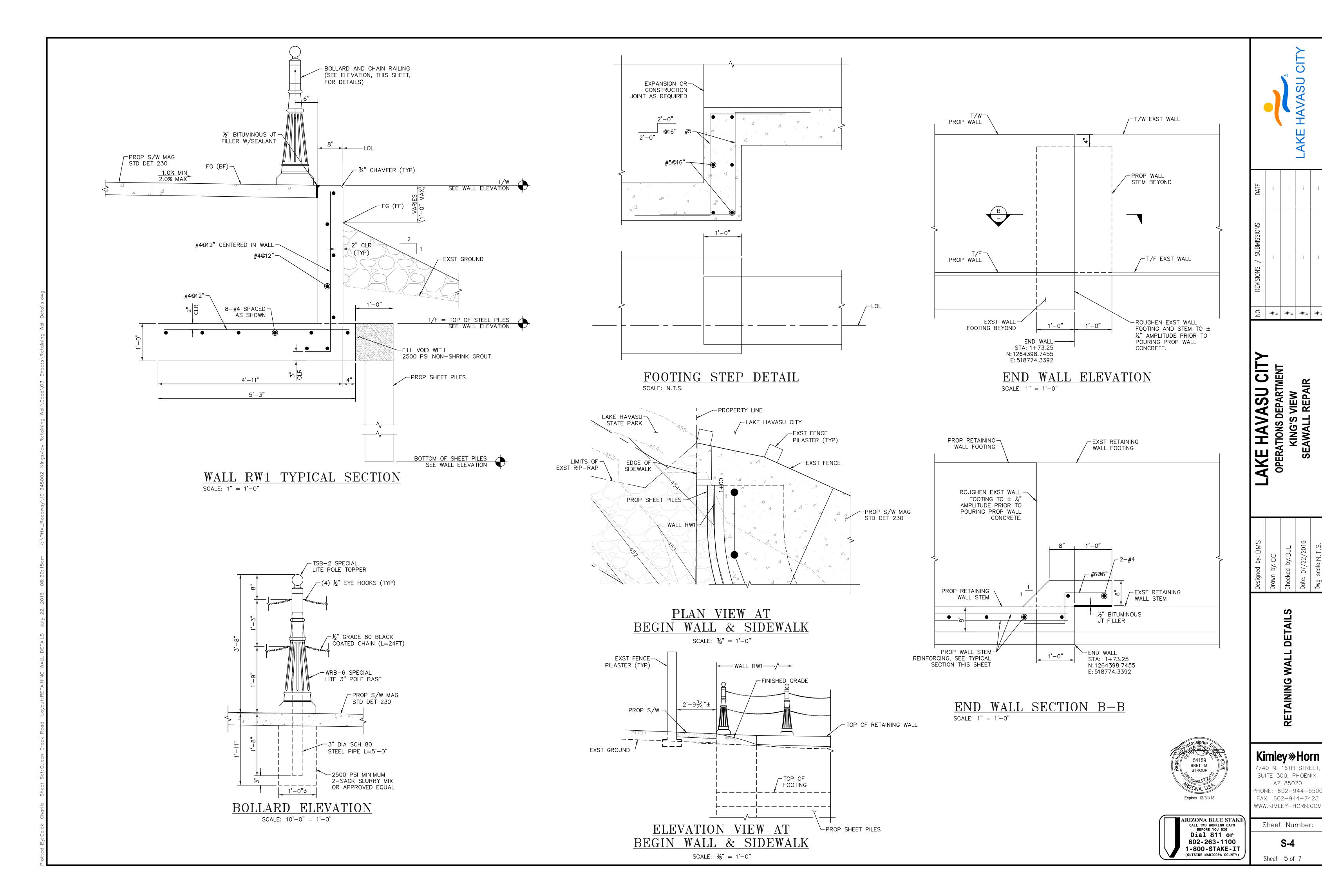
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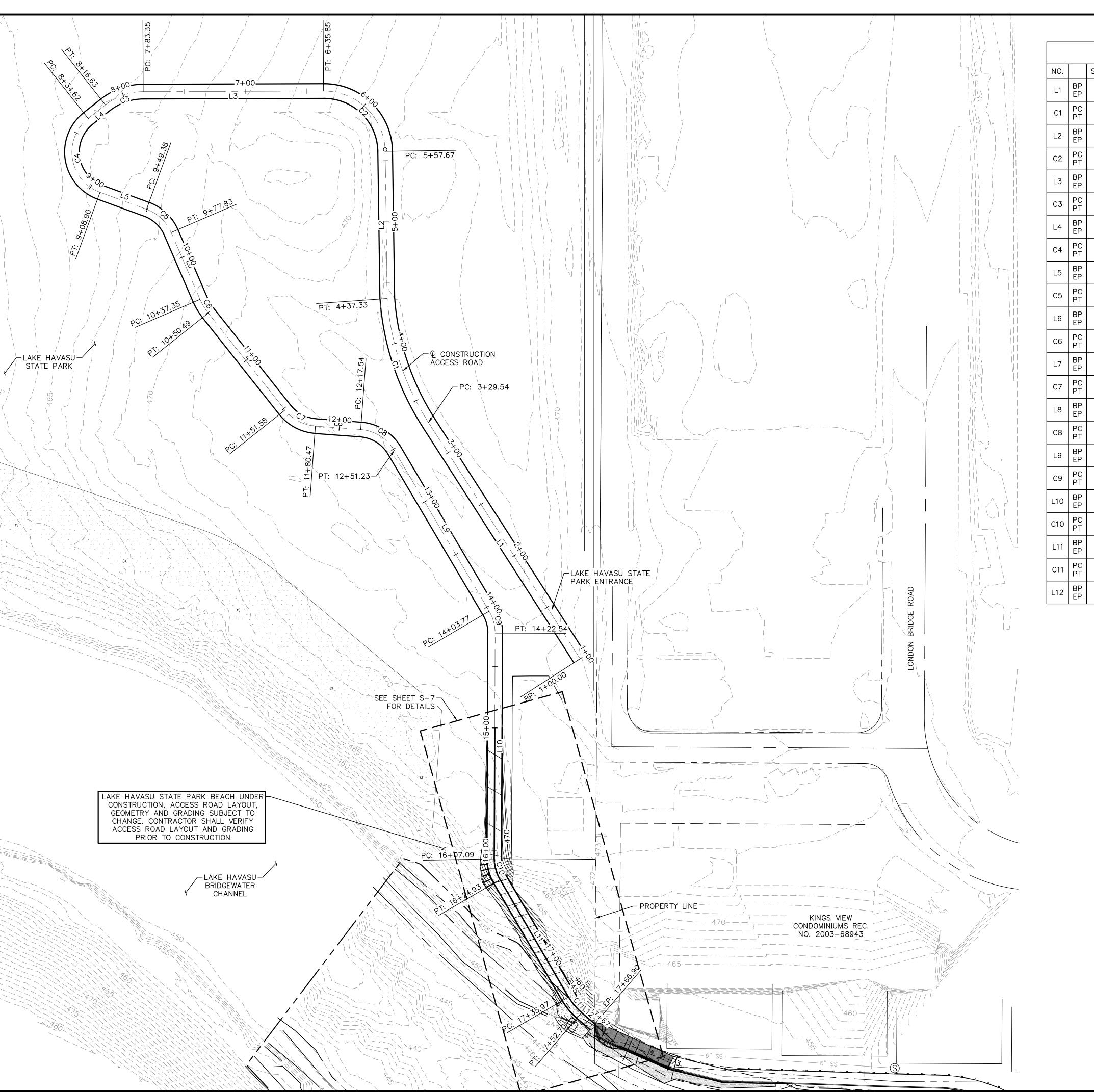
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Sheet Number:

(OUTSIDE MARICOPA COUNTY)

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NO.		STATIONING	NORTHING	EASTING	DELTA OR BRG	RADIUS	LENGTH	CHORD BEARING	CHORD LENGTH
L1	BP EP	1+00.00 3+29.54	1264733.4929 1264926.6712	518702.4027 518578.4153	N 32°41'37" W		229.54		
C1	PC PT	3+29.54 4+37.33	1264926.6712 1265027.9057	518578.4153 518544.8073	Δ=28° 39′ 24″	215.5'	107.79	N18° 21' 54.87"W	106.667
L2	BP EP	4+37.33 5+57.67	1265027.9057 1265148.2358	518544.8073 518543.0738	N 0°49'31" W		120.34		
C2	PC PT	5+57.67 6+35.85	1265148.2358 1265197.5143	518543.0738 518492.7204	Δ=89° 35′ 08″	50.0'	78.18'	N45° 37' 05.27"W	70.454
L3	BP EP	6+35.85 7+83.35	1265197.5143 1265197.0444	518492.7204 518345.2283	S 89°49'03" W		147.49		
СЗ	PC PT	7+83.35 8+16.63	1265197.0444 1265186.2678	518345.2283 518314.3788	Δ=38° 08' 47"	50.0'	33.29'	S70° 44′ 39.44″W	32.678
L4	BP EP	8+16.63 8+34.62	1265186.2678 1265175.1151	518314.3788 518300.2717	S 51°40'16" W		17.98'		
C4	PC PT	8+34.62 9+08.90	1265175.1151 1265114.7825	518300.2717 518309.9719	Δ=121° 36′ 35″	35.0'	74.29'	S9° 08' 01.45"E	61.107
L5	BP EP	9+08.90 9+49.38	1265114.7825 1265100.8997	518309.9719 518347.9878	S 69°56'19" E		40.47		
C5	PC PT	9+49.38 9+77.83	1265100.8997 1265081.9000	518347.9878 518368.1135	Δ=46° 34′ 50″	35.0'	28.45'	S46° 38' 54.06"E	27.677
L6	BP EP	9+77.83 10+37.35	1265081.9000 1265027.2624	518368.1135 518391.7098	S 23°21'29" E		59.52		
C6	PC PT	10+37.35 10+50.49	1265027.2624 1265016.0159	518391.7098 518398.4377	Δ=15° 03' 39"	50.0'	13.14'	S30° 53′ 18.61″E	13.105
L7	BP EP	10+50.49 11+51.58	1265016.0159 1264936.8135	518398.4377 518461.2552	S 38°25'08" E		101.09'		
C7	PC PT	11+51.58 11+80.47	1264936.8135 1264923.6608	518461.2552 518486.0583	Δ=47° 17′ 23″	35.0'	28.89'	S62° 03′ 48.70″E	28.075
L8	BP EP	11+80.47 12+17.54	1264923.6608 1264920.8861	518486.0583 518523.0306	S 85°42'29" E		37.08'		
C8	PC PT	12+17.54 12+51.23	1264920.8861 1264903.7760	518523.0306 518550.5520	Δ=55° 09' 19"	35.0'	33.69'	S58° 07' 50.03"E	32.406
L9	BP EP	12+51.23 14+03.77	1264903.7760 1264772.4212	518550.5520 518628.0894	S 30°33'11" E		152.53'		
С9	PC PT	14+03.77 14+22.54	1264772.4212 1264754.5205	518628.0894 518632.9412	Δ=30° 46′ 32″	34.9'	18.77'	S15* 09' 54.67"E	18.547
L10	BP EP	14+22.54 16+07.09	1264754.5205 1264569.9669	518632.9412 518632.2243	S 0°13'21" W		184.55		
C10	PC PT	16+07.09 16+24.93	1264569.9669 1264552.9794	518632.2243 518636.9905	Δ=29° 04' 44"	35.1'	17.83	S15° 40' 21.12"E	17.643
L11	BP EP	16+24.93 17+35.97	1264552.9794 1264457.0519	518636.9905 518692.9169	S 30°14'33" E		111.04'		
C11	PC PT	17+35.97 17+52.70	1264457.0519 1264444.2633	518692.9169 518703.5827	Δ=19° 10' 18"	50.0'	16.73'	S39° 49' 41.95"E	16.653
L12	BP EP	17+52.70 17+66.90	1264444.2633 1264435.0224	518703.5827 518714.3696	S 49°24'51" E		14.20'		







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